

# Table of Contents

## Preface and Organizing Committees

## Chapter 1: Renewable Energy and Building Energy Saving

<b>A Comparison of Detailed and Simple Building Energy Analysis Tools for Eco-Friendly Office Building Design</b> S.T. No and J.Y. Kim	3
<b>A Hybrid System Based on Heat Sink Form with Solar Energy and Ground Source Heat Pump</b> S.L. Ma, Y. Ding, X.L. Shi and N. Zhu	7
<b>Analysis of Factors Affecting Green Residential Building Costs Based on Fuzzy Factor Analysis Model</b> L.F. Ruan and C.Q. Gu	12
<b>Energy Consumption Level of Low-Energy Buildings among Different Climate Zones in China: Case Studies</b> K. Zhang and J. Zhao	20
<b>Energy Saving Benefit Analysis of Green Construction Using Energy-Efficient Lighting Equipment</b> P.H. Sung, J.D. Lin, R.H. Shiu, C.Y. Chen, C.Y. Lin and M.D. Lin	24
<b>Experimental Study on Performance of Top Lighting Solar Light Pipes in the Meeting Room in Winter in Beijing</b> Y.P. Wu and H. Li	29
<b>Optimization Design of Courtyard Sunspace Passive Solar House</b> M.D. Chen	33
<b>Optimization of Operating Parameters of a Solar Ejector Refrigeration System on Exergy Analysis</b> L.Y. Yin, Q. Tian and F.F. Zhang	37
<b>Potential Retrofitting of Existing Campus Buildings to Green Buildings</b> R.B. Zakaria, K.S. Foo, R.M. Zin, J. Yang and S. Zolfagharian	42
<b>Progress on Vacuum Insulation Panels in Building Application</b> W.P. Wu, Z. Chen, C.D. Li, T.Z. Xu, J.L. Qiu, Z.F. Chen, Y.Q. Zhou, J.M. Zhou and X.Y. Cheng	46
<b>Construct the Residential Building Energy Saving Comprehensive Evaluation Index System of Inner Mongolia</b> G.H. Jin and H.T. Qiu	51
<b>Evaluation Based on Interval Number Analytic Hierarchy Process (AHP) for Solar Water Heating System of Civil Buildings</b> G.X. Wang, Z.H. Wang and D.H. Duan	56
<b>Calculation and Optimization of Molten Salt for Solar High Temperature Heat Storage</b> Q.H. Yan and H.N. Wang	62
<b>Analysis of Energy Consumption and Energy-Efficient Renovation for the Rural Existing House in Shihezi of Xinjiang</b> X.L. Su and S.G. Jiang	66
<b>Statistical Analysis of Influence Factors on Building Energy Consumption in China by Literature Overview</b> Y. Qu, Z. Chen and J. Darkwa	70
<b>Comparative Studies on Solar Combisystem by Different Auxiliary Heat Sources</b> Q.H. Yan and N. Li	76
<b>Role of Temperature and Flow in Biomass Transporting in Porous Media</b> J.J. Huang and C.Y. Zhang	80
<b>Improved Passive Solar Hot-Air Heating of Residential Design and Research</b> B. Yang and S.G. Jiang	88
<b>Energy-Saving and Economic Study of Natural Ventilation in City Tunnel</b> J.F. Mao, Y.L. Huang, J. Zhou and Z.L. Xing	92

<b>Status and Prospects Analysis of Coal Briquette Technology</b> W.Q. Wen, S.Q. Jin, S.P. Jin, S.L. Fang, X.L. Zhang, S.Y. Huang, L.S. Shu and Y.X. Zhang	98
<b>Study on Residential Building Energy-Saving Comprehensive Evaluation System in Hot Summer and Cold Winter Zone Based on AHP</b> J.S. Tu, R.X. Li and F.Y. Qin	102
<b>Development Overview and Direction of Energy-Saving Technology on Plastic Injection Molding Machine</b> G. Feng and C.G. Zhang	109
<b>Energy-Saving Effect Evaluation Research of the Existing Residential Building in North China Area Based on Unascertained Measure Theory</b> D.J. Liu	113
<b>Research on Wind Energy Exploitation in Buildings Environment</b> H.S. Chen, G.H. Hu and M.C. Tu	120
<b>Measures Analysis of Energy Saving Reconstruction for Existing Building Windows</b> J.P. Liu and X.F. Zhao	127
<b>The Cascaded Utilization of Geothermal Resources</b> Q.M. Li	131
<b>Analysis on Sewage Source Heat Pump Applications in the Building Energy Saving</b> X.T. Liu, D. Yang, Z.Q. Lou and Y.T. Zhang	135
<b>Operation Conditions Analysis on Solar Energy Compression-Injection Secondary Refrigeration System</b> F.F. Zhang, Q. Tian and L.Y. Yin	139
<b>Large-Scale Intelligent Building Energy-Saving Measures Based on BA System</b> X.R. Chen and W. Yang	144
<b>The Influence of Street Geometry on Building's Energy Consumption in Different Climate Zones</b> N. Wang and M. Elnimeiri	147
<b>Experimental Study on Solar Assisted Heat-Pump Water Heating System</b> Y.D. Dai and N. Yu	151
<b>Renewable Energy Technologies for University Library Building</b> J.L. Liu	155
<b>The Method to Determine the Optimal <math>\text{La}^{3+}</math> Doping in DSSC Electrode for BIPV</b> H.M. Tian, A.H. Chen, W.F. Duan and F.L. Tian	160
<b>Studies on a Prefabricated Solar Collector Panels</b> Q. Wang, S. Li, M. Yu, J. Meng and W.L. Cao	164
<b>The Study of Solar Photovoltaic Building Integration Design Methods</b> Z.Q. Zhao and L. Tao	169
<b>The Urban Villages Building Envelope Energy-Saving Research in Northwestern Henan</b> X.M. Zhang and S.P. Yan	173
<b>The Study on Force Behavior of Concrete Filled Steel Tube Lattice Wind Turbine Tower with Three Limb Columns</b> Y. Wen	179
<b>Scenario Analysis of City Residential Electricity Consumption Based on the Time-Series Forecast - Taking Quanzhou City as an Example</b> X.C. Hou and L.J. Zhu	184
<b>The Design of Sunlight Collecting Machine in the Fiber Optic Lighting System</b> Z.J. Zhu and J.X. Cai	189
<b>Investigation on a Passive Solar House Equipped with Water Thermal Storage Wall</b> W.L. Wang, Z. Tian, X.L. Niu and X. Xu	193
<b>Experimental Study of Greenhouse Solar Energy Combined with Coal-Fired Boiler Heating System</b> X.L. Luo, H.S. Chen, B. Chen and H.C. Fu	197
<b>Integrated Design for High Performance Buildings: Principles and a Case Study</b> Z. Tian	204
<b>Technical and Economic Analysis on Self-Insulation Schemes of 65 Percent Energy Efficiency for Residential Buildings in Hot Summer and Cold Winter Zone</b> H. Lin, X.P. Feng, P.F. Zhang and Y. Han	209

<b>Analysis of the Traditional Regional Architecture Energy</b> H.L. Meng and L. Li	213
<b>The Preliminary Exploration of Building about Natural Draft, Natural Lighting, Renewable Energy Utilize in the Central Plains - Take the Green Demonstration Building of Zhengzhou Energy-Saving and Environmental Protection Industry Incubator Center as an Example</b> F. Wei, X. Wang and X.Y. Han	217
<b>Research and Discussion on Energy-Saving of Existing Buildings in Northwest of Liaoning Province</b> Y.J. Wu and Y. Ma	221
<b>The Analysis and Forecasting Model of the Energy Supply and Demand in Jiangxi Province</b> Y.Z. Wu, Q. Xu, C. Fu and L. Liu	225
<b>Research on Energy-Saving Rebuilding Technologies for Existing Residential Buildings in South of Jiangsu Province</b> J.B. Bai, Y. Zhang and Y.Z. Hao	232
<b>The Characteristics of Porous Solar Wall Heating System with Localized UFAD</b> L. Ouyang and W. Liu	237
<b>Renewable Energy Techniques – A Sustainable Model for Architects Regarding Physical Environment and Economic Empowerment of the Sub Urban and Rural Areas in Bangladesh</b> R. Rummana, A.S. Alam, A.N. Wahid and M. Saifuzzaman	244

## Chapter 2: Indoor Environment

<b>Research on Indoor Environment Pollutants and Controlling</b> J. Liu, Y.G. Zhuo and J.X. Ma	251
<b>Eco-Design of the Interior Light Environment</b> X. Liu and B. Wang	254
<b>Indoor Scene Management Based on Portal Attributes Information</b> H.W. Zhang and H. Liu	258
<b>New Machine for Complex Structure Decoration Materials</b> J.G. Luo and M.Y. He	262
<b>Comparative Study on Indoor Air Quality Evaluation Method</b> X.Y. Leng and P. Jiang	267
<b>The Development Trend of Green Residential Interior Design</b> X.Y. Xu	272
<b>Psychological Needs of the Aged and their Indoorspace Environment Design</b> W.Y. Dong, Z.J. Wen and Z. Chen	276
<b>Discussion on Indoor Formaldehyde Treatment</b> C.F. Xia	280
<b>The Hollowing Test Method Research in Constructional Floor and Decoration Projects</b> J.Y. Zhang and X. Gao	284
<b>Py-GC-MS Analysis on Benzene-Alcohol Extractives of <i>Eucalyptus urophydis</i> Wood for Fine Indoor Environment</b> W.X. Peng, L.S. Wang, Z. Lin and Z.Z. Zheng	288

## Chapter 3: City Ecological Environment

<b>Performance of Urban Rainwater Retention by Green Roof: A Case Study of Jinan</b> L. Ma, B. Qin and C.Q. Zuo	295
<b>The Analysis of Urban Ecological Wetland</b> Z.Z. Zeng and H.S. Xia	300
<b>Study on Urban Lake Ecosystem Health Assessment</b> W.G. Chen	304
<b>The Research of Ecological Environment of Zhangjiakou in the Construction of the Circle of Green Economy Around the Capital</b> Y.Q. He, W.L. Shi and J.F. Li	309

<b>A Study to Assess Shade in Tainan City for Thermal Comfort</b> S.H. Lee, B.F. Yan, C.Y. Sun, W.W. Chou and J.Z. Lin	314
<b>Change of Urban Soundscape in Response to Climate Ecology</b> F.F. Liu and L.J. Huang	318
<b>The Study on Public Motivation Policies Concerning Construction of Urban Ecological Environmental Infrastructure</b> J.H. Cui and H.Y. Li	322
<b>Effects of Meteorological Factors on PM<sub>10</sub> Pollution in Yantai Urban Areas</b> J.G. Song, M. Chang, X.Z. Wang and W. Liu	328
<b>Evolution of Urban Landscape Pattern in Suzhou City during 1987-2009</b> G. Fang, Y. Zhang and J. Yang	332
<b>A Review of Regional Ecological Security Evaluation</b> L. Wang and Y.S. Pang	337
<b>Countermeasures for Public Environment Design in Cold Area</b> F. Chen, J.Q. Lin and X. Zhu	345
<b>An Analysis of the Ecological Effectiveness in City Sustainable Development from the View of Scientific Ecological Scale</b> L. Li and X.J. Chen	349
<b>Effect of Deicing Salts on Urban Soils and the Health of Roadside Pines (<i>Pinus tabulaeformis</i>) in Northeast China</b> Y. Zhang, F.Y. Li, T.T. Sun and J.L. Wang	353
<b>Practical Research on Green Building Evaluation System in Eco-City</b> X.Q. Ma, Y. Zhao and S.Q. He	357
<b>Cold Chain Management Based on the Viewpoint of a Low- Carbon Economy</b> C.Q. Deng and G.P. Cheng	361

## **Chapter 4: Water Purification and Wastewater Treatment**

<b>Employing of Aquatic Plants for Urban Landscape Water Purification in Kaifeng</b> L.M. Zhao and H.T. Wan	367
<b>A CFD Methodology for Solid and Liquid Flow Fields of Sedimentation Tanks</b> Y.L. Liu, Y. Zheng, P. Zhang and W.L. Wei	371
<b>Study on Domestic Sewage Treatment with Rotating Biological Contactor</b> F. Li and Z.L. Qi	376
<b>Microwave-Assisted Zeolite Hydrothermal Synthesis from Coal Fly Ash and its Application</b> H.M. Cui, L.F. Ke, F. Li and T. Kang	380
<b>Effects of Preparation Methods on Characterization and Coagulation Performances of Polyferric Sulfate (PFS)</b> D. Lu, Y. Zhang, J.T. Zhou, M.X. Chen and X.W. Wang	385
<b>Biodegradation of DBP by Biofilm Reactor</b> J. Yu, Y. Fu, M.J. Jiang and W.H. Ren	390
<b>Study on the Adsorption of Methylene Blue by Starch-G-Poly(acrylic Acid)</b> C.N. Zhang and X.M. Wang	400
<b>Effect of L-cysteine on Continuous Fermentative Hydrogen Production</b> Y.Y. Qu, W.Q. Guo, J. Ding and N.Q. Ren	406
<b>Study of the Migration Characteristics of Iron Ion in Laterite in Water</b> Y. Huang, P. Liu, K.S. Jin, Z.L. Zhang and B.C. Fu	411
<b>Research on the Shape of Oxidation Ditch Diversion Wall</b> Y.L. Liu, B. Lv and W.L. Wei	419
<b>Health Risk Assessment of Wastewater with Carbinol in Gas Field</b> P.K. Jin, X.W. Ning, X. Jin and X.B. Wang	424
<b>Investigation of the Submerged Depth of Aeration Impellers in an Oxidation Ditch by Numerical Simulation</b> Y.L. Liu, B. Lv and W.L. Wei	429
<b>The Adsorption Performance of Furfural Residue for Menthylene Blue</b> G.J. Ren and S.H. Li	433

<b>An <i>In Situ</i> Acid Wastewater Treatment Equipment for Laboratory</b> X.M. Wang, T.L. Huang, X.C. Guo and F.L. Wang	437
<b>Study on Variable Permeability of Porous Carbon Graphite</b> Q. Liu	441
<b>Effect of Fe Coagulant on the Performance of PAC-MBR</b> S.B. Wang	446
<b>Study on the Decolorization Kinetics of Azo Dye Wastewater by Sponge Iron</b> Y. Zhang, Z.C. Wang, M.C. Gao, Z.L. She, X.J. Zhang and H.X. Yang	450
<b>A New Kind of Catalyst for Enhancing the Conversion Rate of <math>\text{Fe}^{2+}</math> to <math>\text{Fe}^{3+}</math></b> X.Q. Niu	454
<b>Treatment of Wastewater Containing Disused Extractant by Advanced Oxidation Processes</b> Y.H. Xiang, J.K. Song, X.D. Li and J. Wang	458
<b>Synthesis of an Electron-Rich Donor: 2,7-Bis(5-Bromothiophen-2-yl)-9,9'-Spirobi[Fluorene]</b> X.X. Sun, Y.Z. Lou, Y. Hu and M.E. Hu	463
<b>Study of the Li-Insertion-Extraction Process in <math>\text{Li}_3\text{Mn}_{0.5}\text{Ti}_{0.25}\text{O}_3</math></b> J.H. Jiang	467
<b>Study of the Inorganic Ion Exchanger <math>\text{Li}_3\text{Mn}_{0.25}\text{Ti}_{0.5}\text{O}_3</math></b> J.H. Jiang	471
<b>Synthesis of <math>\text{Li}^+</math> Memorized Spinel <math>\text{Li}_3\text{Mn}_{0.75}\text{O}_3</math> by a Solid State Reaction Crystallization Method</b> J.H. Jiang	475
<b>Experimental Research on Dynamic Evaluation Method for Scale Inhibitors of Reverse Osmosis</b> X.N. Zhang and X.M. Li	479
<b>Super Heavy Oil Wastewater Treatment by Combined ME and I-BF Process-A Field Pilot Study</b> K. Tong, Y.H. Zhang, Q.H. Song and Q. Wang	485
<b>Study on Lamellar Structures and Parameters of Polyethylene Hollow Fiber Membranes Made by Melt-Spinning and Stretching Method</b> F.F. Shao, Y.F. Zhang, J.Q. Meng and Z. Liu	491
<b>The Effect of Carbon Particle-Size on N-Doped Carbon Catalyst for Oxygen Reduction Reaction in Microbial Fuel Cells</b> X.X. Shi, Y.J. Feng, J. Liu, Q. Yang and N.Q. Ren	495
<b>The Application of Nanofiltration Technology in Recovery of Ionic Liquids from Spinning Wastewater</b> X. Liu and W. Wang	499
<b>Mobility of Metals from Fly Ashes and its Potential Impact on Surface Water Quality in Guizhou Province, Southwestern China</b> F. Liu, H.B. Luo, J. Zhu and J. Yuan	503
<b>Treatment of Excess Sludge Containing Heavy Metal by Chemical Ways</b> Z.M. Zhang	507
<b>Visible-Light Driven <math>\text{C}_3\text{N}_4</math> Photocatalysts Prepared by a Thermal Decomposition Process</b> H.F. Ma and P.S. Tang	512
<b>Study on Nitrogen Removal Efficiency of Hybrid Anoxic/Aerobic Membrane Bioreactor</b> B.G. Su, Z.Q. Liu, X.J. Li, X. Xu and L. Gao	516
<b>Removal of the Endocrine Disrupting Chemicals Nonylphenol from Water by Activated Carbon</b> X.D. Wang and Y.F. Xiao	520
<b>Optimizing the Step-Feed Ratio and Modeling the Effluents of Aerobic Tank with ASM1 in ECOSUNIDE Process</b> R.G. Li and Y.Q. Zhang	526
<b>Synthesis of Nanocrystalline <math>\text{YVO}_4</math> by Microwave Assisted Process and its Photocatalytic Activity</b> Y.L. Ye and P.S. Tang	531
<b>Preparation <math>\text{BiTaO}_4</math> by Precipitation Method and its Visible-Light Photocatalytic Activity</b> J.J. Zhang and P.S. Tang	535
<b>Study on the Ionic Conductivity of PAALi-G-PEO Polymer Electrolyte</b> X.W. Guo, S.T. Wen, M. Qiao and X.L. Jia	539

<b>New Technologies of Purification and Utilization on Mine Water</b> A.J. Shao and Z.G. Li	543
<b>DGGE Analysis Bacterial Community Structure of Advanced Sludge Reduction Process</b> D.W. Mu	549
<b>Analysis on Control Operating Conditions of Water Chemistry of Nuclear Power Unit</b> W. Li and J.F. Li	553
<b>Dye Wastewater Treatment by Means of Electrochemistry in Diaphragm Electrolyzer</b> J.S. Hu, J.L. Dong, Y. Wang and X.D. Ren	557
<b>Study on the Preparation of Nano Fe<sub>3</sub>O<sub>4</sub> Powder and its Properties</b> R.C. Liu, F.Y. Jiang and Z.Q. Liu	562
<b>Study on SRT Influence to Phosphorus Removal and Sludge Characters of HA-A/A-MCO Process</b> N. Zuo	566
<b>A Novel Application of Micro-Aerobic Hydrolysis and Acidification on the Treatment of Refractory Chinese Traditional Medicine Wastewater</b> Z.L. Chen, Z.Z. Liu, X.R. Sun, X.H. Huang and J. Zhan	570
<b>Research on Removal of SiO<sub>2</sub> from Heavy Oil Wastewater</b> J.L. Xu, L. Liang, J. Wang, Y. Xu and L.X. Luo	575
<b>Study on the Preparation of Nano TiO<sub>2</sub> Powder and its Properties</b> Z.Q. Liu, F.Y. Jiang and R.C. Liu	578
<b>The Experimental Study of a New Sedimentation Tank</b> H.F. Tao, X.Y. Qiu and Y.Z. Hao	582
<b>Synthesis of HS/NH<sub>2</sub>-Bi-Functional Mesoporous Silica and its Adsorption of Co(II) and Mn(II) in Dilute Solutions</b> Q.X. Yao, M.C. Jia and J.F. Men	586
<b>The Study of Operation and Dynamic on the Modified A<sup>2</sup>/O Process</b> L. Wang and X.N. Ma	591
<b>Detection of COD in the Wastewater Treatment Process Based on Fluorescence Excitation-Emission Matrix Spectrometry</b> S.X. Du, Y.Q. Wu and Z.B. Yuan	599
<b>Advance of Optimization Methods for Identifying Groundwater Pollution Source Porperities</b> Y.Q. Long, W. Li and J. Huang	603
<b>The Kinetics of Methyl Methacrylate Miniemulsion Polymerization Characterized through a Fluorescence Method</b> H.K. Feng, H.Y. Qiu, L.Y. Ding and C.J. Xu	609
<b>Performance and Mechanism of Polyferric Aluminum Chloride – Quaternary Ammonium Salt Composite Flocculants in Treating Surface Water</b> C.Z. Sun, Q.C. Liu, L. Zhu, J. Liu and R.M. Mu	613
<b>Study of Water Aquaculture Coleus Blumei to Improve the Landscape Water Body Quality in Eutrophic Waters</b> Z.Q. Ma, P. Jiang and S.Y. Wen	617
<b>Ultrasonic Degradation Performance of the NiZrMo Heteropoly Salt with Keggin Structure</b> Z.H. Zhang and Z.W. Guo	623
<b>The Study of Hospital Wastewater Treatment by Combined Pure-Oxygen Aeration and A/O Process</b> W.W. Yu, Z. Zhang, S.L. Chen, T. Wang and T.C. Zhang	627
<b>The Transformation of Heavy Metal Be in Activated Sludge Process</b> F. Chen, X.L. Zhu and W. Yu	633
<b>Feasibility Study on Satisfing Standard of Water Pollutants for Pulp and Paper Industry</b> X.L. Zhu, J. Wang, Y.L. Jiang, Y.J. Cheng, F. Chen and S.B. Ding	637
<b>Photocatalytic Performance of Bi<sub>2</sub>O<sub>3</sub> Prepared with NH<sub>3</sub>•H<sub>2</sub>O under Different pH Value</b> X.Y. He, J.Z. Li, J.B. Zhong and W. Hu	641
<b>Fabrication and Photocatalytic Activity of Ag/Bi<sub>2</sub>O<sub>3</sub></b> Y. Lu, J.B. Zhong, J.Z. Li and W. Hu	645
<b>Photocatalytic Decolorization Performance of ZnO/SiO<sub>2</sub></b> Y. Lu, J.B. Zhong, J.Z. Li and W. Hu	649
<b>Decolorisation of Methyl Orange Solution with KIO<sub>3</sub> under UV Irradiation</b> T. Wang, X.Y. He, J.Z. Li, J.B. Zhong, F.C. Zeng and W. Hu	653

<b>Surface Modified Magnetic Silica Particles for the Immobilization of Laccase and its Use for Pentachlorophenol Removal in Water</b>	
Y. Wang, D. Zhang, X. Li and B. Li	657
<b>Pollution Survey and Countermeasures of Urban Slow-Flow Water Body</b>	
J.X. Gao, H.B. Dang, L. Liu and S. Kong	661
<b>The Research of Degradation about 1,2,4-Trichlorobenzene by Microorganism on Different Experiment Condition</b>	
D.Y. Xu and X.W. Lv	666
<b>Engineering Example of A<sup>2</sup>O-High Density Sedimentation Tank-Filter Tank Process in the Treatment of Municipal Sewage</b>	
Y.F. Li, X. Wang and S. Liu	671
<b>Optimization of Calcium Carbonate Precipitation for <i>Bacillus pasteurii</i></b>	
T. Duan and W.K. Zhu	676
<b>Study on Anaerobic Simultaneous Denitrification and Methanogenesis Combined with Shortcut Nitrification Process Treating Piggery Wastewater</b>	
R. Liu, Y.H. Song and H.S. Wang	680
<b>Comparative Researches on Micro-Polluted Raw Water by Three Different Pre-Oxidizing Agents</b>	
L.J. Jin and K. Huang	688
<b>Adsorption of PAEs from Aqueous onto Modification Zeolite</b>	
L. Wang, Y.F. Xu, X. Gao and J.S. Guo	692

## **Chapter 4: Water Purification and Wastewater Treatment**

<b>Isolation and Characterization of Denitrifying Bacterium <i>Pseudomonas mendocina</i> aHD7 with Anaerobic Ammonium Oxidization</b>	
J.B. Xiao, H.X. Jiang and S.Y. Chu	699

## **Chapter 5: Air Environment Control and Architectural Environment Improvement Techniques**

<b>The Research on the Airflow Organization of Residential Kitchen and how to Introduce Make-up Air</b>	
S.W. Shang, L.C. Pang and H.F. Guo	707
<b>Indoor and Outdoor Air Contaminants Coupling Relationship and Measures of Improving Indoor Air Quality</b>	
S.B. Geng and M.X. Xiao	711
<b>Situation and Forecast of Construction Sector's Carbon Emission</b>	
R.J. Liu and Z.H. Zhang	718
<b>Research on the System Construction and Countermeasures for Low Carbon Housing Industry</b>	
L.F. Shen, Q. Li and J.W. Cao	722
<b>The Study of Building Industrialization Development Mode Based on Carbon Emissions Trading</b>	
L.Z. Sun and X.H. Wu	726
<b>Health-Based Risk Assessment on Air Pollutants in Beijing</b>	
L.Y. Yang and S.T. Wu	733
<b>Research on Temporal and Spatial Distribution of PM<sub>10</sub> in Yantai Urban Areas from 2006 to 2010</b>	
M. Chang, J.G. Song, X.Z. Wang and W. Liu	737
<b>Diao Bingshan Sun City Endowment Community Wind Environment Design</b>	
Y. Fu and X.J. Yang	741
<b>Observing Negative Air Ions Concentration in Beidaihe and Negative Air Ions' Evaluation Standard</b>	
Y.G. Zhuo and J. Liu	747
<b>Study on Influence Law of Urban Architectural Structure on the Automobile Exhaust Diffusion Based on CFD</b>	
Y. Zhang, Z.Q. Gu, Z. Wang and Y. Yu	751

## Chapter 6: Environmental Chemistry, Environmental Engineering and Environmental Protection

<b>The Contribution of Earthworms to the Waste Management</b> L.M. Zhao and C. Yan	759
<b>Principal Factors Preventing China Environmental Risk: Area Angle</b> C.Q. Liu	763
<b>The Study of Environment Levels of Dioxins and Furans in a Typical Regional</b> S.S. Su and Y. Hui	769
<b>Analysis of the Change of Heavy Metal Contents in Farmland in Mengcheng</b> G.W. Xu, X. Wu, S.L. Huang, X.T. Yuan, Y. Gao, Y. Zhang and C.B. Dong	773
<b>Characteristics of Nutrients Removal from Stored Algae Anaerobic Biogas Slurry in Artificial Aquatic Vegetable Wetlands</b> G.C. Zhu, J.W. Zhao, X.X. Zhao and X.W. Lu	777
<b>Antimicrobial Additives from Endophytic Fungus <i>Fusarium solani</i> of <i>Ficus carica</i></b> H.C. Zhang, Y.M. Ma and R. Liu	783
<b>The Application of Earthworms in the Waste Management</b> L.M. Zhao and S. Wen	787
<b>Comprehensive Utilization Study of Iron Tailings</b> F.Z. Dong	791
<b>Application of Sulfoaluminate Cement for Solidification/Stabilization of Fly Ash from Municipal Solid Waste Incinerators</b> Q.N. Sun, J.M. Li, B.Q. Huo and J.B. Wang	795
<b>Prediction of Municipal Solid Waste Production in Changchun City Based on Gray Model GM(1,5)</b> C.Q. Wang, X.D. Wei and X.L. Wang	799
<b>Analysis on Relationship of Chlorophyll-a and Environmental Factors in Wuliangsuhai Lake</b> Z.F. Jiang, C.Y. Li and S. Zhang	804
<b>Quantitative Analysis of Ecological Effects Caused by Master Planning in Hilly Area: A Case Study of Kunming Expo Eco-Town, China</b> S. Wu, C.Q. Duan and G.P. Aquino	808
<b>Integrating Environment into Development Strategy of Tianjin Binhai New Area through Strategic Environmental Assessment</b> L.L. Tian and Y.F. Zhao	820
<b>Research on Construction of National Eco-Industrial Demonstration Park of China</b> X. Bai, C.L. Chu and M.T. Ju	825
<b>FEM Analysis of Field Test for Tensile Forces Creating in Geosynthetic Components in Waste Landfill Liner</b> M.F. Li, Q.X. Zhao and L. Yang	829
<b>Evolution of Heavy Metals Leachability and Speciation in Residues of Sewage Sludge Treated by Microwave assisted Pyrolysis</b> L. Fang, N.N. Yuan, Y.G. Wu, X.X. Zhao and H.Y. Sun	833
<b>Supercritical Fluid Extraction of Genistein from Extruded Soybean</b> G.H. Sheng and Q.C. Zhou	838
<b>Effect of Aeration Rate on Forced-Aeration Composting of Sewage Sludge and Maize Straw</b> B. Hu, Z.C. Wang, M.C. Gao, Z.L. She and C.C. Zhao	843
<b>Water-Saving Technology in Irrigation</b> Y. Liao, Y. Dong, X.W. Chen, Y.Q. Liang, S.L. Wang and W.H. Zhang	847
<b>The Study of Suction Test and Engineering Parameters of Yantai Domestic Garbage Municipal Treatment Plant</b> Z.H. Wang, Y.M. Yin, S.Q. Yan, D.K. Li and J.G. Song	851
<b>Reaction Mechanism and Kinetics Model of the Green Surfactant Alkyl Polyglucoside</b> H.P. Li, Y. Zhang, Y.Z. Yang, H.X. Huang and S.H. Xiao	855
<b>Analysis and Thinking of the Current Condition for Traffic Pollution of Urban Roads</b> L.L. Li, S.J. Liu and H. Xu	859



<b>On the Application of BOT Mode in Environmental Protection and Pollution Abatement in Industrial Parks</b> D.H. Liu	864
<b>Study on the Influence of Phosphorus Removal Effect and Membrane Fouling by Adding Aluminum Salt to A/O-MBR</b> X.J. Li, Z.Q. Liu, H. He, L. Gao and X. Xu	868
<b>Polluting Extent of Heavy Metal is Analyzed in Topsoil</b> W.B. Liu, H. Liu, Y.Q. Liu and H. Cheng	874
<b>Physicochemical Properties of Artificial Soil Composed of Sewage Sludge, Fly Ash, and Slag</b> K.F. Wang, N. Peng and D.L. Liu	880
<b>Energy Consumption - Economic Growth Relationship and Carbon Emissions in Twelve Provinces of West of China</b> Y.P. Bai and J. Yang	885
<b>Evaluation of Zinc Contamination in the Sediments of Salt River Mouth, Taiwan</b> C.T. Chen, C.W. Chen, C.F. Chen, C.D. Dong, M.S. Ko and C.M. Kao	893
<b>Effects of Recycled Melamine-Formaldehyde Plastic on Properties of High-Density Polyethylene</b> M.S. Yang and L.K. Li	897
<b>The Effect of Transpiration for Heavy Metal Uptake of Hyperaccumulators</b> H.Z. Hao, R.G. Zhong, R. Xiao, C.W. Liu and X.B. Zhong	901
<b>Research on the Establishment of the Ecological Service Platform for Forest-Based Carbon Trading with the Example of Huai'an City</b> Z.G. Wang	905
<b>Design, Preparation and Application of a Combined Catalyst for Coal Combustion</b> J. Cui, H.D. Huang, W.J. Dong, C.R. Li and Y.Y. Zheng	910
<b>Assessment of the Desirability of Tourism Destinations Based on Perceptual Analysis of the Quality of Environment Case Study: The Coastal Areas of Ramsar</b> S.A. Eshliki and R. Norouzian	914
<b>Silica-Scaled Chrysophytes of Cold Region: A Case Study Zhenbao Island Wetland Preserve, Northeast China</b> C.X. Ma, J. Zhang, H.X. Yu, Y.X. Wei and X.P. Yuan	922
<b>Agricultural Nonpoint Source Pollution Model Analysis and Application</b> Q. Yang, S.N. Sun, Z.H. Jiang, L.X. Ying and Z.J. Liu	926
<b>BMP Research on ANPSP Control in Middle Region of Zhejiang Province</b> Q. Yang, Z.H. Jiang, W.Y. Hou, Z.J. Liu and X. Qiu	930
<b>Ecological Transforming in Industrial Heritage Site: Quarry Park Proposal for Sustainable Development</b> Q.Y. Zhu and Y. Zhu	934
<b>Environmental Safety Evaluation of High-Rise Buildings in Baotou</b> Y.X. Ding, N.B. Ma and L. Ding	943
<b>Germplasm Development and Innovation of High Quality Edible Pumpkin: Halixiang NO.1.</b> Y.R. Dai, H. Xie and C.Z. Du	947
<b>Study on Optimizing the Managerial Strategies of Municipal Sludge Treatment and Disposal in a City of Northern China</b> J. Lv, X.M. Bu, J.Y. Li, Q.Y. Meng, W.Z. Li and J.X. Xiong	950
<b>Preparation of Environment-Friendly Deicing Salt of Calcium-Magnesium Acetate from Apple Sticks</b> Z.Q. Liu, F.Y. Jiang and R.C. Liu	954
<b>Numerical Analysis of Water Mist Drop Survival Time</b> Y. Li, J.Y. Pu and S. Zhang	958
<b>Microwave Irradiation Syntheses of Poly Dodecyl Methacrylate- Methacrylate- 2-EthylHexyl Resin and Application in Pesticide</b> J. Li, X.H. Zhou and W.Q. Xiao	962
<b>Environmental Problems and Countermeasures Caused by Pit Precipitation</b> H.F. Tong and H.F. Li	969
<b>Analysis of Environmental Characteristics and Operational Reports of Small and Medium Turbines</b> A.M.S. Florescu, G. Bandoc and M. Degeratu	973

<b>Optimizing Enzymolysis Technology of Casein and Studying Antibacterial Activity of Generated Peptides</b> Q.D. Pan and M. Xia	977
<b>Distribution and Contamination Evaluation of Lead in the Sediments of Northern Kaohsiung Harbor, Taiwan</b> C.W. Chen, C.F. Chen and C.D. Dong	984
<b>Cadmium Contamination in the Sediments of Love River Mouth, Taiwan</b> C.D. Dong, C.F. Chen and C.W. Chen	988
<b>Distribution and Source of Polycyclic Aromatic Hydrocarbons in Surface Sediments of Jen-Gen River Mouth, Taiwan</b> C.F. Chen, C.W. Chen and C.D. Dong	992
<b>Influence of Lead (Pb) Stress on the Physiological Growth of Dishlia</b> Q.H. Zhu and H.X. Xia	996
<b>Tunnel Construction and Environmental Protection</b> H.J. Li	1000
<b>Research Progress on Ways of Secondary Metabolism in Plants</b> X.B. Liu, Y.S. Jia, N. Li, H. Gong, Y.H. Zhang and W. Ma	1004
<b>Study on Preparation of ZnO-TiO<sub>2</sub> Composite Photocatalyst and its Properties</b> Z.Q. Liu, F.Y. Jiang and R.C. Liu	1008
<b>Synthesis of Spherical Assembly Composed of MnO<sub>2</sub> Nanoparticles Using Spent Zn-Mn Batteries</b> M. Yang, G.L. Zhang, P.F. Li, X.Y. Li and C. Chen	1012
<b>Factorial Analysis of Heavy Metal Concentration in Roadside Farmland Plants around Kathmandu, Nepal</b> M. Zhang, X.D. Yan, F. Zhang, C. Zeng and L.C.P. Devkota	1016
<b>Laboratory Investigation into Applicability of Red Sand-Bitumen Mixture as Landfill Liner</b> S.K. Kariuki and M.A. Shahin	1022
<b>Consideration on the Research of Coupling Models for Heavy Metal Contaminants Transport</b> F.R. Ma	1026
<b>Response of Three Wetland Plants Growth and Nutrient Distribution to Earthworms in Constructed Wetland System</b> D.F. Xu, Y.X. Li, H. Fang, X.L. Zhao and Y.D. Guan	1030
<b>The Cooperation and Coordination Game of Constructing Low-Carbon Green Oil Port</b> H.M. Fan, G.S. Dong and X.N. Zhang	1036
<b>An Evaluation of Environmental Assessment Methods</b> J. Hubert and A. B Jahromi	1041
<b>The Current Situation of Pollution Control and Management of the Liao River Basin</b> Y.N. Gao, P.P. Zhang and J.X. Fu	1046
<b>Research of the Model Boundary Problem of Xinxue River Constructed Wetland</b> Q. Miao, J.J. Sun, S. Xue, L. Bian and X.P. Wang	1050
<b>The Clean Production Examination and Verification of a Liquid Milk Factory</b> L.X. Gao, K.W. Pi, D.J. Wan and M. Wang	1055
<b>The Possible Mechanisms of Cadmium Accumulation in <i>Tagetes erecta</i> L. under Macronutrient Deficiency</b> Q. Feng, P.D. Tai, S.S. Fu, P.J. Li and Y.Q. Zhang	1060
<b>Preliminary Analysis on Protection an Ecological Evaluation System of Yellow River Delta Wetland</b> X.L. Zhang and F.R. Zhang	1065
<b>Comparison with Determing Methods of Organic Matter for Sludge Compost in Different Treatments</b> J.S. Yang, P. Li and Y. Ding	1070
<b>Electrochemical Corrosion Behaviors of CuZrHfTi Bulk Metallic Glasses in NaOH Solution</b> B. Sun, W.Y. Zhang and J.B. Lu	1075
<b>The Networked City and the Sustainable Packaging Design</b> Y. Li, D.Y. Yang and W.J. Gu	1079
<b>Selection and Impact Mechanism of Washing Agents for Chromium Contaminated Building Waste</b> X.R. Wang, Y.X. Zhang and J.M. Shu	1083

<b>Pyrolytic Characteristics and Kinetics of Xanthoceras Sorbifolia Oil</b> Q.C. Zhou and G.H. Sheng	1093
---	------

## **Chapter 7: Road and Railway Engineering**

<b>The Influence of Polypropylene Fiber on the Performance of Concrete Pavement</b> H.R. Shen, Y.X. She and P.W. Gao	1099
<b>A Study on the Earth Pressure of Top Culvert of High Embankment</b> S.S. Zhou, X.M. Sun, J. Peng and J. Lv	1104
<b>Study on Improving the Safety Training Effect of Safety Control Staff in Highway and Waterway Construction</b> z.q. SUN, Y.X. Du and Y.C. Liu	1112
<b>Research on the Moisture Damage Occurred on the Asphalt Pavement</b> C.Q. Pang	1117
<b>A New Monitoring Method of Wheel/Rail Contact Forces Caused by Out-of-Round Railway Wheels</b> Z.C. Wang, Y. Song and Y.M. Shen	1125
<b>Study on Stress Characteristics of the Anchor Bolts in Special-Shaped Roadway</b> F. Peng, H.G. Ji and X.Z. Yan	1131
<b>The Research of Pavement Damage Investigation Method Based on GPS Mode</b> Y.C. Cheng and R.H. Bai	1135
<b>Influence Factors on Highway High Slope Seismic Stability and Preventive Measures</b> L.P. Liu	1139
<b>Analysis of Composite Grade on Highway of Continuous Long and Steep Grade</b> E.H. Xing, R. Wang and J. Li	1143
<b>Performance Properties of GFRP Dowels in Concrete Pavement Joints</b> Y.L. Li, L.K. Li, Y.Q. Tan and Z.J. Xue	1147
<b>Research on Load Transfer Efficiency of GFRP Dowel in Jointed Plain Concrete Pavement</b> L.K. Li, Y.L. Li, Y.Q. Tan and Z.J. Xue	1152
<b>The Development and Application of 3D Visualization and Monitoring Prewarning System for the Highway Road Slope in Mountain Area Based on GIS</b> G.L. Chen, Y.H. Zhang and X.G. Liu	1156
<b>Research on Performance of Road Application of Converter Bituminous Steel-Slag Mixture of Jigang Group Co. Ltd</b> F.L. Lu and J. Li	1161
<b>Research on Grading Features of Bituminous Steel-Slag Mixture</b> F.L. Lu and J. Li	1171
<b>Load Analysis of Transversely Prestressed Continuous Concrete Pavement with Oblique-Reinforced</b> H. Cai, K. Jiang, J. Miao and J.G. Liao	1179
<b>The Impact of Road Construction Materials Dynamic Modulus Parameters on Road Surface Shearing Stress</b> E.Y. Chuo, D.Q. Wang and G.R. Deng	1183
<b>Evaluation Method of Segregation of Road Concrete</b> Y.C. Zhang, L.L. Gao and D.P. Wang	1188
<b>Highway Construction Quality and early Disease Control of the Cement Stabilized Gravel in Northeast Cold Region</b> P.F. Cheng and H.L. Liu	1194
<b>Research on Test &amp; Detection Data Report Format of Quality Control for Road Capital Projects</b> B.Y. Gong, Y.H. Lu and Z.J. Bao	1198
<b>Application of Context Sensitive Design for Meihe Freeway</b> X. Tao	1202
<b>Silt Embankment Reinforced by Sleeve Valve Barrel Fracturing Grouting</b> D.Y. Zhu and Q.T. Zhang	1209
<b>Relative Distance Measure Model for the Fuzzy Synthetic Evaluation of Subgrade Stability in Seasonal Frozen Area</b> H.B. Liu, Y.M. Xiang, H. Wang and Y.Y. Sun	1213

<b>Goaf Treatment for Gold Mine under Expressway</b> D.Y. Zhu	1218
<b>Modulus Back Analysis of Pavement Structure Based on PSO</b> X.L. Li, X.N. Li, Y.H. Zhong and F.M. Wang	1222
<b>Mechanical Properties of Coal Gangue Used as Subgrade Filling</b> Y. Peng, J.S. Yang and J.H. Liu	1226
<b>Research on Highway Pre-Compression Term on Alluvial Flat Soft Clay Treated with Packed Drain Well</b> H.Y. Yuan, X.M. Wang and G.Q. Li	1230
<b>Research on Typical Structures of Asphalt Pavement in African Desert District</b> Y.H. Kan, X. Qiu, X.Y. Lin, X.H. Luo and Y.F. Fu	1234
<b>Study on Vibration of Futian Underground Hub in Guangzhou-Shenzhen-Hong Kong High-Speed Rail</b> J. Yao, M.Q. Xiao, D. Huang and G.H. Yang	1238
<b>Bonding Characteristics Analysis of Ultra-Thin Overlay of Asphalt Pavement Layer</b> Y.H. Yang, Z. Liu, J.X. Gao and G.S. Zhu	1245
<b>A New Method for Aggregate Proportion Design of Mixture</b> Y.H. Li, K. Huang and Y.Z. Gao	1250
<b>The Equivalent Stress Contrast Analyse of Inverse Structure and General Structure Asphaltum Pavement</b> J.H. Gao	1254
<b>Mechanism of Shallow Slide on Soil Road Cutting Slope during Spring in Seasonal Frozen Region</b> W. Shan, C.C. Zhang and Y. Guo	1258
<b>Research on Matching Ability between Trunk Road Network Structure and Urban Spatial Layout</b> Y. Wu, Y.J. Deng, Y.E. Gao and Z.L. Liang	1264
<b>Study on Safety Measures for Construction of Foundation Pit close to Existing Railway Lines</b> X.H. Zhang, Q.M. Gong and S.H. Zhou	1279
<b>The Research on the Temperature Resistance Test of Polypropylene Geotextile in Asphalt Overlay</b> R.G. Hou, B. Tian and L. Quan	1287
<b>The Numerical Study of the Stability of Roadway Seeping in the Roof</b> F.Z. Liu and W.G. Qiao	1293
<b>Evaluation Analysis on the Traffic Safety Related to the Road Alignment Based on the Operation Speed</b> H. Gao and S.W. Yuan	1297
<b>Planting Optimization of Glare Avoidance Model on Flat Road</b> H.Q. Yu, Q. Yang, F. He, C. Wu and L.L. Gong	1302
<b>Research on Relationship between Riding Quality and Pavement Distress of Asphalt Pavement</b> B. Peng, L. Hu, Y.S. Jiang and L. Yun	1306
<b>Study on the Major Factors Causing Road Slope Strong Deformation of the Shuiluo River Transmission Project in Sichuan</b> L.C. Hao and Y.S. Li	1314
<b>Impacts of Gradation on the Property of Lime-Fly Ash Bound Macadam</b> W. Xue, X.P. Han, Z.G. Xia and Q. Zheng	1321
<b>Urban Road Roundabout Method of Contrast Optimization and Research</b> J.D. Chen, Q. Yang, X. Qiu, S.N. Sun and F. He	1325
<b>Monitoring and FDM Simulation Analysis of an Expressway with Unsymmetrical Loadings</b> C. Zhao, K. Wu and S.C. Li	1329
<b>The Influence of Porous Asphalt Pavement Based on DEMATEL</b> C.T. Hung, S.H. Chen and C.C. Wu	1333
<b>Hamburg Wheel Tracking Test for Porous Asphalt Concrete</b> W. Jiang and J.J. Xiao	1338
<b>Study on Model for Settlement Prediction of High-Filled Embankment in Mountainous Area</b> P. Li and H.T. Wan	1344

<b>The Application of Streetlight Wireless Monitoring System in Tianjin Bonded Area</b> Z.L. Lin and D.P. Zhang	1348
<b>The Comparison between Ecological Engineering Method and Conventional Engineering Method for the Mountain Area Roadway Design</b> T.T. Chen, C.S. Lin and T.I. Kuo	1352
<b>Old Asphalt Road Surface Mixture of Cold Regeneration Research Laboratory Test</b> L.Y. Wei, Z.L. Yang, H. Qian and Q.Z. Wang	1357
<b>Laboratory Study on Cold-Mixtures for Asphalt Pavement</b> S.B. Ma, L.J. Wang and G.Q. Zhang	1361
<b>The Application of the Improved TOPSIS Method in Bid Evaluation of Highway Construction</b> Q.Y. Meng, C.L. Zhang, T. Song and N.L. Li	1365
<b>The Effect of Different Warm Additives on Performance Properties of HMA</b> S.W. Du and S.S. Li	1369
<b>Numerical Simulation of Railway Track Irregularities Based on Stochastic Expansion Method of Standard Orthogonal Bases</b> H.B. Zheng, Q.S. Yan, J.L. Hu and Z. Chen	1373
<b>The Effect of Cement on Performance Properties of Foam Asphalt Cold Recycled Mixture</b> S.W. Du and D.F. Huang	1379
<b>Comparative Study on Water Aging of Rubber Asphalt and TOR Rubber Asphalt</b> P. Xiao, M.P. Wu, S.S. Shi and D. Jiang	1383
<b>Study on the Effects of Tamping Frequency to the Compaction Degree of Trackbeds</b> X.J. Wang and X.L. Geng	1387
<b>Analysis of Dynamic Deviator Stress of Reinforced Subgrade under Traffic Loading</b> S.C. Wang	1392
<b>Load Transfer Mechanism of Embankment Supported by Sparse Piles</b> H. Zhang, M.L. Shi, R.K. Zhang and Y. Zhao	1396
<b>Study on Shearing Stress of Asphalt Surface on Lean Concrete Base</b> L.J. Suo	1402
<b>The Influence Analysis of the Soil Base and the Base Stiffness of Highway Asphalt Pavement on Pavement Thickness</b> J. Song, W.Y. Cui and Y.Y. Fan	1406
<b>Experimental Study of the Accumulation Dynamic Residual Strain of Ice under Rail Traffic Loading</b> Z.Y. Zhu, S.J. Chen, Q.L. Li, L.N. Wang and F. Zhang	1410
<b>Highway Roadside and Median Green Belts Design Method Based on the Theory of Dynamic Vision</b> Z.R. Jia	1417
<b>Dynamic Analysis of the Piled Embankment under Seismic Excitations</b> S.P. Zhang, C.Y. Cui and Z.T. Wang	1422
<b>Study on Semi-Rigid Road Base Asphalt Pavement Typical Structure of Town Roads</b> L.Y. Wei, H. Li, J.L. Zhang and S.B. Ma	1426

## **Chapter 7: Road and Railway Engineering**

<b>The Rational Construction Length Alternately by Subsections of the Reconstruction Project of Freeway</b> S. Cheng, S.Y. Zhu, H. Wang and B. Liu	1433
<b>Research on the Dynamic Characteristic of the Bogie in Dynamic Track Stabilizer under the Excitation of the Track Irregularities</b> L.H. Wang, G.W. Liu, A.N. Huang and Y.Y. Huang	1438
<b>Study on Performance and Microstructure of SBS Modified Asphalt during Shearing Process</b> A.H. Kang and W.H. Zhang	1442
<b>A Research into the District Strategy on the Transportation Junction Terminal of High-Speed Railway - An Analysis of the Urban Design of the High-Speed Railway District in City of Wenling</b> J. Chen, Y.L. Zhou and Y.Z. Huang	1448

<b>Discussion of Goaf Critical Depth Calculation Methods under Freeway</b> A.B. Jin, X.J. Lei and J.H. Sun	1454
<b>Research on Relationship of Dynamic Calculation Parameters and Deformation</b> J.Y. Yuan, T. Cheng, D.B. Zhang, Z.H. Wu and J. Xiang	1459
<b>Numerical Simulation Modeling of GPR on Road Disease</b> B. Zhai and Z.M. Gong	1463
<b>Analysis of Fretting Wear of Type II Fastener Elastic Bar</b> Z. Wu, X.J. Ning and P.R. Zhao	1469
<b>A Study on the Requirements for Minimum Longitudinal Slope of the Vertical Curve on the Freeway</b> R.W. You	1474
<b>Research on Ground Subsidence Law Using FEM for Comprehensive Mechanized Caving Coal Mining under Railway</b> Y. Wang and Q.Y. Li	1479
<b>Study on Horizontal Displacement of Alluvial Flat Soft Ground under Embankment</b> X.M. Wang, H.Y. Yuan and L. Wang	1484
<b>Study on Critical Fracture Criterion of Asphalt Mixture Based on the Semi-Circular Bending Test</b> Y. Liu, J. Li and X.N. Zhang	1488
<b>Study on Load Stress of Lean Concrete Base in Asphalt Pavement</b> L.J. Suo	1495
<b>Discussion on Rock-Fill Embankment and Manufactured Sand Using Tunnel Abandoned Dreg in Hu-Yang Expressway</b> H.Y. Yuan, X.M. Wang and W.J. Song	1499
<b>Cohesive Cracking Simulation of Concrete Using Effective Modulus</b> J.C. Wang, L. Zhang and J.M. Zhang	1503
<b>Evaluation of Local Asphalt Binders under Superpave Specification</b> H. Arshad and Y.J. Qiu	1509
<b>Research on Determining Method for Asphalt Pavement Repair Area of Semi-Rigid Base Course</b> L.Y. Wei, Y.F. Wang and S.B. Ma	1513
<b>Dynamic Calculation of the Port Highway of Riprap Quantities</b> M.H. Pan, W.B. Peng and Y. Wang	1517
<b>Evaluation of Asphalt Mixes Containing Reclaimed Asphalt Pavement</b> H. Arshad and Y.J. Qiu	1522
<b>Construction of Adjustment Model of Traffic Volume Forecast in The Latter Part of Expressway Operating</b> M.S. Li and Z.H. Zhu	1526
<b>Thermal Effect Mechanism on Composite Pavement Consisted of Asphalt Surface Overlay and Concrete Layer</b> Y.N. Dong, Q. Huang and H.P. Wang	1532
<b>Research Progress on Ultraviolet Aging of Asphalt and Asphalt Mixtures</b> H.X. Li, J. Wang and F.X. Li	1537
<b>Research on Asphalt Pavement Rutting Deformation</b> W. Liang, B.H. Gong and Z.B. Zhang	1541
<b>Analysis and Application of Ecological Protection Technique for Slope Protection in Mountainous Area Expressway</b> F.Y. Qin, H.Y. Ge, F.L. Yan and G.M. Chang	1545
<b>The Experimental Research about Vibration Compacting Load Transfer Spread in Roadbed</b> B.T. Huang, D. Liu, F. Wang and J. Li	1550
<b>Experimental Study on the Progressive Failure Zone of Non-Bolted Roadway with Infrared Radiation Detection</b> Y.J. Zhang, L.Q. An, L.T. Mao and J.T. Wang	1555
<b>Research on Water Damage of Asphalt Pavement and Control Measures</b> Y. Liu and B. Liu	1560
<b>Research on Harmonic Control of Electric Railway</b> X.Z. Xu and Y.J. Dong	1564

<b>The Shaping Process Research on Crumb Rubber Modified Asphalt Mixture</b> M. Yu, G.X. Wu, W. Liu, X.Y. Wang and L. Zhang	1568
<b>Experimental Study on Thermal Conductivity of Road Concrete</b> Y.C. Zhang, L.L. Gao and J.M. Shen	1573
<b>Research on Road-Side Safety Evaluation and Disposal Technologies of Mountainous Rural Highway</b> Q.Z. Wang, Y. Zhang, S.B. Ma and K.Z. Jiang	1577
<b>Studying Viscoelastic Properties of Asphalt Mixture Basing on CAM Model in the Full-Temperature-Full-Frequency Range</b> F.X. Chi, L.J. Wang, X.N. Zhang and J. Shi	1583
<b>Studies on the Residual Settlement of CFG Pile Composite Foundation of the Wuhan-Guangzhou High Speed Railway</b> F. Zhang, Z.Y. Xu and Z.Y. Li	1590
<b>Technique for Construction of the Cap Beam of the Door-Shape Piers of an Overpass Transversal to the Contact Wire of an Existing Railway</b> X.M. Xie	1596
<b>Research on Anti-Rutting Performance of Reconstruct Pavement</b> L.Y. Wei, F. Gao, S.B. Ma and Q.Z. Wang	1601
<b>Load Distribution Form of Soil between Piles in Geosynthetic Reinforced Pile-Supported Embankment</b> Y. Jia and L.C. Yang	1605
<b>Displacement Field Study on the Full Width of Rigid Airport Pavement to Aircraft Loadings</b> X.M. Zhang and Q. Dong	1611
<b>A Method for Temperature Correction of HMA Dynamic Modulus</b> Y.L. Ye, C.Y. Zhuang and R.F. Zhang	1615
<b>Influence Analysis of Roadway Friction on Shock Wave Attenuation</b> N. He and B. Qin	1619
<b>Analysis on the Traffic-Response of Asphalt Concrete Overlay on PCC-Slab</b> W. Xu, X.C. Wang and S.Q. Li	1623
<b>Evaluation Index LPD of Highway Lighting's Energy-Saving</b> W. Li, C.Z. Zhu and Y. Yang	1628
<b>Analysis on the Site Location and Impact Factors of the High-Speed Rail Station - As a Case of the Beijing-Shanghai High-Speed Rail Stations</b> H.L. Yin, D.X. Cui and S.K. Li	1631
<b>Crash Hazard Comparison between Rural and Urban Road Segments Based on GIS and Logistic Regression Technology</b> B. Wang, X.D. Yan, M.W. An, C.P. Zhang and L. Ma	1635
<b>Analysis of Effect of CFG Pile Composite Foundation Pile Spacing on Embankment Stability Based on Centrifugal Model Tests</b> J.S. Zhang, C. Guo and S.W. Xiao	1641
<b>Study on the Performance of Graded Gravel Roadbase in Freeway Asphalt Pavement</b> L.Y. Wei, J.L. Liu, S.B. Ma and Q.Z. Wang	1649
<b>Study on the Wind-Sand Flow Movement Characteristics and the Shielding Effect of the Wind-Break Wall along the Railway in Gobi Area</b> J.J. Cheng	1653
<b>Influence of Design Parameters of Highway on the Deformation</b> Y.M. Zhang and X.D. Zhang	1658
<b>The Effect Analysis of the Plate-Stone Berm Structure on Safety of Anti-Thawing of Roadbed in Qinghai-Tibet Railway</b> W.Y. Li and C.L. Wang	1663
<b>Research on the Law of the Infuence on Multilayer Slope Load to the the Different Gradient High Slope Stability</b> J.L. Wu and Y.X. Zhang	1667
<b>Research on Longitudinal Slope of Highway Based on Control by Flow Path Length</b> Z. Zhang and J.P. Gao	1672
<b>Research on Permeability Regularities in Subgrade behind the Bridge Abutment</b> Z. Zhang	1676

<b>Wireless Remote Health Monitoring System Based on GPRS for Mountainous Highway Subgrade along Reservoir Bank</b> Z.L. Yan, H.P. Li and H.J. Chai	1681
<b>Study on Influence of Unloading of Vacuum on Stability of Embankment Improved by Vacuum Combined with Preloading</b> J.F. Liu, G.F. An and G. Zheng	1688
<b>Study on Temperature Shrinkage Problem of Oblique-Reinforced Transverse Prestressed Continuous Concrete Pavement</b> H. Cai, J. Miao and K. Jiang	1694
<b>The Research on the Application of the Steel Slag Produced by the Converters of Jigang Group Co. Ltd on Base Course</b> F.L. Lu and J. Li	1699

## **Chapter 8: Transportation Planning, Construction and Operation Organization**

<b>Research and Application on the Urban Public Transport Route Accounting System</b> Z.K. Han, Q. Pan and B.W. Yang	1709
<b>Model of Level of Service for Urban Expressway Cloverleaf Interchanges</b> X.D. Zang and Y.H. Tang	1715
<b>Research on Impedance Function of Highway Under Snow</b> X.D. Zang, X. Zhang and Z.H. Qi	1721
<b>Application of the Internet of Things Technology in Explosive Dangerous Goods Transport</b> C. Liu, Y.D. Li and S.W. Ji	1725
<b>Study on Implementation Method of Left-Turning Traffic Forbiddance Measure on Urban Road</b> J. Lu, Y.X. Wang, L.L. Dai and J.G. Gu	1729
<b>Bike Sharing System in Foshan: Planning &amp; Practice</b> X.M. Zeng and Y.H. Zhang	1738
<b>Applications and Planning Theories of the Rail Transportation System in Airport Based on Air-Rail Intermodalism</b> J. Ouyang	1744
<b>Study on Location Planning of Regional Parking</b> X.J. Zhang	1748
<b>Research on Transportation Structure Model of Dispersed Multi-Center Urban Based on Urban Rail Transit</b> X.Q. Zeng, K.X. Cao and Y.Y. Zhu	1753
<b>The Study on Transport Organization Process Design of Self-Supporting Railway Company</b> F.T. Shi, H.S. Sun, H.F. Li and Y.P. Guo	1757
<b>Study on Equalization of Urban-Rural Public Transportation</b> L.H. Li and J. Wang	1761
<b>Application of Multiple-Factor Prediction Model on the DALIAN New Airport's Freight Traffic Volume</b> X. Zhang, F. Zhang and L. Luo	1765
<b>Study on Hybrid Genetic Algorithm for Capacitated Vehicle Routing Problem</b> C.Y. Ren	1769
<b>Study on Freight Traffic Flow of Port</b> S.W. Ji, L.S. Wang and K. Ding	1773
<b>Study of Traffic Accessibility in Poyang Lake Economic Zone Oriented by High-Speed Railway</b> H.Y. Yin	1778
<b>Effects of the Visibility on Traffic Flow</b> K.Z. Bai, L. Yang, J. Huang, R.S. Zheng and H. Kuang	1782
<b>Simulation and Experiment for Highway Toll Station</b> X.Y. Kuang, S. Zhou and L.H. Xu	1786
<b>The Research on the Optimization of Transportation Routing for Fresh Food by Improved Genetic Algorithm</b> Y. Wu, Z.B. Meng and M. Peng	1790



<b>Urban Rail Transit Operation during World Expo 2010 Shanghai</b> W. Zhu	1797
<b>Study on Tabu Search Algorithm for Multi-Cargo Loading Problem</b> C.Y. Ren	1802
<b>Road Safety in Developing Countries - The Case of Transportation Management in Dar Es Salaam City</b> P.K. Mzee and Y. Chen	1806
<b>The Classified Management of Transport of Dangerous Goods Section</b> S.M. Feng and G.Q. Yin	1815
<b>Urban Traffic Management and Urban Planning</b> J.P. Liu and Z.X. Tang	1820
<b>Urban Mass Transit Network Project Selection Using the Fuzzy Expandable Engineering Optimization Model</b> Q. Li and L.F. Shen	1824
<b>The Study on Transportation Planning for Historic Cities Based on Low Carbon Concept</b> H.Y. Cao and Z.H. Song	1829
<b>The Study on the Safety of High School Students' Bicycle Traffic in Beijing</b> D.Y. Ji, C. Liu and Y.D. Li	1834
<b>The Walkability Assessment of Lishan Road: A Case Study in Jinan, China</b> L. Wang, Y.L. Jiang and Z.J. Li	1838
<b>The Research of Emergency Rescue Sites Layout During the Highway Reconstruction</b> L.H. Ni, J.Z. Zuo and H.B. Lv	1842
<b>Comparison of the Evacuation Softwares in the Applications of the Railway Station</b> R.Y. Chen and S.X. Lu	1847
<b>Study on Coordinated Planning of Integration of Urban Rail Transit and Conventional Public Transportation</b> Q.F. Kong and X.N. Sun	1852
<b>The Research of New City Road Network Level Structure Based on Supply and Demand Balance</b> K. Chen, J.J. Wang, F. Han and L.P. Qiu	1857
<b>The Investigation and Analysis of Hangzhou Transportation Status</b> B. Huang and M.X. Shen	1862
<b>Mechanism Analysis of the Impact on Chinese Urban Rail Transit Construction on the Surrounding Real Estate Prices</b> J.L. Lv and Y. Jiang	1866
<b>The Measures of Realizing Urban Public Bicycle System</b> X.J. Zhao, J.Y. Li and L.F. Li	1870
<b>Research on Reasonable Method of Determining Toll Rate for Toll-by-Weight Expressway</b> L.Y. Wei, Y. Liu and S.B. Ma	1874
<b>Effect of Toll Rate for Toll-by-Weight Expressway on Vehicle Volume</b> L.Y. Wei, J. Hou, L. Chen and J.B. Zhang	1877
<b>Modeling Traffic Conflicts between Pedestrians and Vehicles at Signalized Intersection Based on the Cellular Automata</b> X.M. Li, X.D. Yan and J.F. Wang	1881
<b>Optimizational Model of Transit Line Chosen</b> W.B. Liu	1887
<b>Serviceability Based Park and Ride Choice Behaviors Influenced by Road Toll Policy for Metropolitan Commuting Corridors</b> H. Zhao, X.D. Yan, C.P. Zhang and M.W. An	1891
<b>A Decision Making Model for Urban Mass Transit Planning</b> C.B. Li and K. Yang	1898
<b>Research on Speed Limit of Two-Lane Highway of Mountain Area</b> Y.H. Kan, X. Qiu, X. Shen, Q. Yang and L.Y. Zhang	1904
<b>Taboo Search Algorithm for Optimizing Shunting Scheme of Through Wagon Flow Delivering and Fetching Operation</b> J.B. Xie, Y. Han, L. Han and R.N. Yang	1908
<b>Choosing Destinations of Medium and Small Airports</b> Y.Q. Qu and J.F. Zhu	1915

<b>A Structural Equation Model to Analyze Interrelationship between Activity Participation and Trip-Chaining of Nuclear Household</b> M. Yang, D. Li and W. Wang	1923
<b>Steering Transportation Planning into Sustainable Development Strategy</b> T.J. Li and K.M. Chen	1930
<b>Study on the Model of Intercity Passengers' Trip Mode Choice Based on Cluster Analysis Method</b> H. Peng and M.M. Xu	1934
<b>Hub-and-Spoke Airline Network Design Method and Application Based on Gravity Model</b> L. Han and N. Zhang	1941
<b>Dynamic Analysis of Trebling-Pivot Vehicle on Undulate Pavement</b> Y.W. Cao, Y.L. Yi and M. Qin	1947
<b>A Case Study on Hangzhou's Public Bicycle System in Relieving Pressure on Road Transport</b> B. Huang and M.X. Shen	1951
<b>Prediction for Percentage of Vehicle Entering Expressway Rest Area Based on BP Neural Network</b> X.Y. Shen, H.X. Liu and J. Liu	1956
<b>Railway Passenger Flow Volume Prediction Model Analysis Based on Cobb-Douglas Function</b> X.D. Du and N. Ren	1961
<b>Inventory-Transportation Integrated Optimization Problem in Many-to-Many Distribution Network</b> Y.M. Pei, C.M. Ye and L.H. Liu	1965
<b>A Modal for Operation Coordination among Regional Rail Transit, Urban Metro and Bus</b> P. Liu	1970

## Chapter 9: Bridge Engineering

<b>Monitoring of Long-Span Self-Anchored Arch Bridge Constructed with Rotation Method</b> J. Hu, X.Y. Sun and S.J. Jiao	1977
<b>Research on Parametric Modeling and Computing of Multi-Tower Suspension Bridge Based on ANSYS</b> J.Q. Zhang, A. Zhao, J.Y. Song and Y. Yang	1983
<b>Instability Analysis of High Pier of Continuous Rigid Frame Bridges</b> X.M. Dong	1989
<b>Investigation on Nonlinear Dynamics Behavior of Stay Cables under Rain-Wind Induced Vibration in the Consideration of the Restoring Force and the Coulomb Force Comprehensively</b> Y.G. Xiao, Y. Tang and Y. Huang	1994
<b>The Study on Vehicle EHA Active Suspension with Time-Delay Control</b> F.R. Kou	2002
<b>Factors Analysis on the Temperature Field of PC Box-Girder Bridge</b> Y.D. Nie, W. Zhang and Z.L. Wang	2006
<b>The Experimental Analysis of Surface Wave Testing in the Rock-Filled Embankment Used Large Particles</b> X. Li and G.Q. Zhu	2013
<b>Dynamic Response of Bridge Subjected to Moving Harmonic Load</b> K. Li and J. Ji	2019
<b>Study on Running Performance of Train and Index of Traffic Safety of Shangbaipu Bridge</b> Z.H. Zhou, Z.D. Qian, G. Liu, Y. Wen and Q.Y. Zeng	2023
<b>Analysis on the Old and New Reinforced Concrete Beam Shrinkage and Creep Difference Effect of Broadened Bridge</b> J. Meng and X.D. Yang	2027
<b>Rail Elevated Bridge Bearing Displacement Monitoring Based on FBG Sensor</b> S. Li, Q. Ning and H. Chen	2034

<b>Theoretical and FEM Research on Inelastic Displacement of Assembled Truss Bridge with Cable Reinforcement</b> Y.Z. Zhou, K.B. Jiang, Y. Ding and J.K. Yang	2038
<b>Identification of Significant Failure Modes under Traffic-Load for an Arch Bridge System</b> X. Gao, L. Wang and W.H. Qin	2043
<b>The Study on Simulation Static Load Test Base on Flexibility Matrix</b> X.M. Zhang and Y. Gao	2048
<b>Study on Rebuilding Hengzhou Road Bridge about Reversing the Cross Slope of Bridge Deck</b> S.Z. Ren, G.J. He and J.H. Deng	2052
<b>Based on the Minimal Stress Method for the Determination of the Reasonable Completed Bridge Cable Force</b> S.X. Gao, B.C. Yu, C. Gao and Z.Z. Wang	2058
<b>Study of the Longitudinal Pedestal Layout during Beam Prefabrication on Bridge Floor</b> S.X. Zhou, L.L. Li, W. Zhou and C.L. Yang	2062
<b>Process Optimization for Welding Stainless Steel Clad Material Based on Orthotropic Bridge Plates</b> J. Fang and Y.Z. Li	2066
<b>Study on Seismic Strengthening Demand of Damage Concrete Bridge Piers</b> J.D. Deng, Z.H. Zong and Z.H. Xia	2070
<b>Research on Temperature Field and Temperature Stress of Large Span Concrete Cable-Stayed Bridge Girder</b> P. Yan	2075
<b>The Determination of the Problem of the Cable-Stayed Bridge Reasonable Superpositioning Optimization under the Constant Load State, Basing on the Unknown Load Coefficient Method of Midas/Civil</b> B.C. Yu, S.X. Gao, C. Gao, J. Yang and B. Xie	2081
<b>Finite Element Analysis of Thermal Stress for Cable-Stayed Bridge Tower with Cracks</b> Z.R. Feng, J. Shen and X.J. Wang	2085
<b>Internal Force Calculation Method of the Double-Curved Arch Bridge Reinforcement Based on Stress Superposition</b> Y. Zhang, X.R. Zhou and B. Li	2091
<b>Analysis on Post-Construction Settlement of Pile Group Foundation and Load Monitoring for Dazhangcun Grand Bridge</b> H.F. Su, F.C. Liu and E.X. Wang	2095
<b>Support Design and Analysis of Cast - <i>In Situ</i> Prestressed Continuous Box Beam Bridge</b> H.F. Su and F.C. Liu	2100
<b>Analysis of Upside Additional Internal Force Imposed by Asymmetric Settlement of Broadened Bridge Foundation</b> M. Jiang, B.J. Zhao and X.D. Yang	2105
<b>Application of SCGM(1,1) Method in the Construction Monitoring and Control of Continuous Girder Bridges</b> B.F. Duan, C.B. Zhai and X.H. Weng	2113
<b>Investigation of Temperature Effects of Box-Girder Bridge in Typical Winter Weather of QINGHAI-TIBET Plateau</b> H.S. Liu, J. Dong, T. Liang, Z.G. Qi and X.J. Xiang	2117
<b>Investigation of Dynamic Load Test of an Existed Reinforced Concrete Rigid-Frame Arch Bridge</b> T. Liang, J. Dong, L.L. Yang and D.H. Yan	2121
<b>Analysis of the Superstructure of South-to-North Water Diversion Bridge</b> M.H. Li, Y.L. Wang and S. Wan	2125
<b>Test Research on Aerodynamic Interference Effect on Aerostatic Coefficients of Main Beam in Parallel Bridge</b> J. Wang and J.X. Liu	2131
<b>Research on the Influence of Web's Shear Deformation on the Deflection of Composite Girder Bridge with Corrugated Steel Webs in Construction</b> S.M. Zheng, B.W. Yang and S. Wan	2135
<b>Study on Influence of the Truss Bridge's Nature Frequency by Added Masses</b> X.L. Jiang, D.B. Zhang and G.L. Zen	2140

<b>Method of High-Precision Calculation on the Linear Parameters for the Stay-Cable of the Cable-Stayed Bridge</b> X. Li and T.T. Cai	2144
<b>The New Analytical Theory of Distortion of Thick-Walled Concrete Box Girder Bridge</b> X. Xu, H.W. Ye and S.Z. Qiang	2149
<b>Experimental Study of the Influence of Beam-Reduction and Rib-Addition Strengthening Method on Bridge Natural Vibration Properties</b> G.N. Pu	2158
<b>Exact Radial Displacement Solutions of Curved Beams with Clamped-Clamped Ends</b> X.F. Li, Z.F. Yu, C.Y. Zhu and C. Chen	2164

## **Chapter 9: Bridge Engineering**

<b>Calculation for Settlement of High Cap Extra-Long Large Diameter Pile Groups</b> Y.S. Deng, J.Q. Zheng, C.Z. Wan and S.H. He	2171
<b>Supervision of Self-Anchored Suspension Bridge in Reinforced Concrete</b> S.Y. Du	2175
<b>Discussion on Curve Prestressed Reinforcement Simulation in FEA</b> W.X. Huang, L.Y. Tan, H.Y. Yang and H.L. Zhang	2179
<b>Buffeting Time-Domain Analysis of Long-Span and Slender Suspension Bridge with a Steel Truss Stiffened Girder</b> X.J. Jiang, J.Y. Wu and J.X. Liu	2183
<b>Assessment &amp; Analysis of Service Performance for Small-Span Suspension Bridge with Steel Truss Girders</b> H. Sun, Y.J. Qian and F. Zhang	2187
<b>Research on the Influence Factors to the Working Performance of PBL Shear Connectors</b> Y.Z. Zhang, Q. Li and S. Xia	2192
<b>Reinforcement Calculated Method Based on Disease Model of DongFu Bridge</b> P.J. Liu	2199
<b>Analysis of Temperature Effect on Cable-Stayed Bridge at Construction Stage Corrected</b> J.X. Yang and M.C. Yang	2204
<b>Externally Prestressed Steel Box Girder Bridge</b> J.N. Yang, X.J. He and X.C. Yang	2209
<b>A Rocks Based Visualization Cluster Platform Design and Application for Bridge Health Monitoring</b> F. Chen, M. Liu, X.Y. Han and W. Chen	2213
<b>Simulation Analysis of Shrinkage and Creep for Bowstring Arch Bridge Steel Tube Concrete in Different Specification</b> R.L. Zhang, L. Wang, C.A. Yang, B. Yang, C.Y. Zhu and Q.J. Hao	2219
<b>Response Analysis of Bridge across Seismic Fault Zone</b> Q.Z. Li, H.Q. Li and Z.Q. Zhang	2224
<b>Seismic Performance of SFRC Piers under Reversed Cyclic Loading</b> Y.Y. Zhang, H.Y. Wei, W.C. Yuan and W. Hu	2228
<b>The Study on Bearing Capacity Influence for the Steel Tube Deformation in CFST Arch Bridge</b> D.R. Zeng and T.J. Wang	2236
<b>The Closure Scheme Optimization Analysis of Multiple Large-Span Prestressed Continuous Beam Bridges</b> J.M. Hao and K.F. Zhou	2240
<b>Life Cycle Reliability Assessment of Concrete Beam Bridges under Atmospheric Environment</b> X.M. Wang, X.F. Shi and X. Ruan	2246
<b>Reinforcement Experiment of a Hollow Slab Bridge by External Prestressing</b> X.L. Li, F.M. Wang, X.N. Li and Y.H. Zhong	2250
<b>The Finished Product of Rubber Bearing Mechanical Performance Analysis in the Low Temperature</b> T.L. Yu, D.Y. Yuan and X.L. Sun	2254

<b>An Investigation into the Dynamic Mechanical Behaviors of Special-Shaped Arch Bridges</b> C.H. Kou, C.S. Kao, M.C. Yang, T.T. Wu and S.W. Ma	2260
<b>Maintenance Strategies of Historical Bridges in China</b> Z.F. Wang and G.H. Dai	2264
<b>Spatial Effects and Broken-up Analysis for Bottom Plates of Box Girders in a Large Span Rigid Frame - Continuous Beam Bridge</b> X.D. Zuo, Z.L. Qu and B. Ge	2268
<b>Research of Deformation and Stress of Long-Span Arch Bridge under the Effect of Shrinkage and Creep in the Construction Process</b> J.J. Wang, Q.L. Zhu and X.L. Peng	2273
<b>FEM Study on Shear Stiffness of Sloping Segmental Joints in Cantilever Casting Concrete Bridges</b> W. Zhang, Z.L. Wang and S.Z. Tian	2277
<b>Mechanical Analysis for Anchorage Zone Connecting Main Cable and Main Girder of Self-Anchored Suspension Bridge</b> Q.T. Su and D.F. Wang	2281
<b>Health State Evaluation of Continuous Girder Bridge Based on Fuzzy Analytic Hierarchy Process</b> H.T. Li	2285
<b>Mechanical Analysis of Link Slab in Continuous Paving Layer of Simple Supported Girder Bridge</b> F. Li, X.Y. Liu, R.X. Wang and X.W. Wang	2290
<b>A Multi-Purpose Offshore Operation Platform for the Construction of Sea-Crossing Bridge</b> J. Gan, M.J. Jin, W.G. Wu and J. Yao	2294
<b>Analysis on Stability and Ultimate Bearing Capacity of Steel Truss Arch Bridge</b> Y. Liu, X.R. Wang, G. Yang and A.F. Zhang	2299
<b>Additional Longitudinal Expansion Force between Continuous Welded Rails and Extra-Long Continuous Bridges of High-Speed Railway</b> W.S. Liu and G.L. Dai	2304
<b>Full-Scale Dynamic Testing of Qingshui River Bridge</b> J.R. Yang, Y. Bai, H.X. Su and Z.C. Lai	2308
<b>Stochastic Responses of Vehicle-Bridge Coupling System</b> M. Lin, X.W. Zhang and S.Y. Chen	2312
<b>Model Experimental Study on Incremental Launching Construction Method of Large-Span Arch-Girder Combination Bridge</b> X.B. Li, Y. Li and X.S. Kong	2316
<b>Analysis of Dynamic Performance Testing of Bridge Based on Finite Element and Dynamic Load Test</b> Z.G. Lu, G.J. Li and W.W. Jiang	2323
<b>Performance-Based Seismic Design of Long-Span Railway Arch Bridge</b> C.J. Shao, H.P. Yang and Y.J. Qian	2329
<b>Research of the Practical Calculation Method and Procedure of Long Self-Anchored Suspension Bridge</b> M. Tang, Y.C. Ning, X. Xu and X.H. He	2333
<b>The Influence of the Strong Aftershocks on Seismic Performance on Long-Span Arch Bridges Based on the Energy Method</b> Y.L. Gong, A.R. Liu and Q.C. Yu	2340
<b>Analytical Solution to Vertical Dynamic Response of Simply Supported Beam Bridge Traversed by Successive Moving Loads</b> Z.J. Zhang, J.F. Wu, L.Z. Song, S.H. Ma and X.Z. Li	2345
<b>Research on Simply-Supported Continuous Bridge's Internal Force Optimized by Unequal Altitude Bearings</b> S. Gao and L. Wang	2353
<b>Prediction Analysis of Pit Deformation Based on Spatial Data Mining</b> Z.G. Lu, J.Y. Gong and X.Q. Liu	2357
<b>Research on the Fatigue Design Load of Orthotropic Steel Box Girder for Long Span Suspension Bridge</b> C. Chen and B.H. Ji	2365

<b>Structural Characteristics of FRP-Concrete Bridge Deck System</b> F. Li, R.X. Wang, S.W. Chen and J.B. Zhou	2369
<b>Three Dimensional Numerical Analyses of Bridge Piled-Raft Foundation under Riverbed Erosion</b> W.T. Liu and Y.Y. Li	2373
<b>Seismic Response and Earthquake Mitigation Optimal Analysis of Self-Anchored Suspension Bridge</b> X.M. Song and M. Tang	2378
<b>The Finite Element Analysis of Prestressed Concrete Channel Bridge with Three Girders</b> J.B. Li, Y.C. Lu, Z.H. Nie and W.C. Xue	2383
<b>Experimental Study on Mechanical Performance of Unbonded and Bonded Prestressed Concrete Beams</b> J. Su, N.G. Yi, Z.G. Sun, Y. Bai and A.G. Zhang	2387
<b>Error Sensibility Analysis of Finite Element Model of Concrete Filled Steel Tubular Arch Bridge</b> Y. Shao and Z.G. Sun	2393
<b>Disease Analysis and Solutions of the Prestressed Concrete Bridge Cracks</b> D. Zhang and H.B. Yao	2398
<b>Bridge Safety Quick Test Vehicle Feasibility Development Research</b> X.M. Huang and J.B. Song	2401
<b>Method of Damage Evaluation of Long-Span Arch Bridge Subjected to Blast Loading</b> L. He and Y.J. Qian	2405
<b>About the Structural Robustness of Through Arch Bridges</b> R.J. Jiang, Q.M. Wu, Y.Y. Chen, X.W. Yi and J. Tu	2412
<b>Comparative Study on Seismic Performance of Prestressed Concrete Box-Girder Bridges with Corrugated Steel Webs</b> R.J. Jiang, W.M. Gai, X.F. He and Y.Y. Chen	2418
<b>Comparative Study on the Vertical Dynamic Responses of Simply Supported Beam Subjected to Two Typical Vehicle Models</b> C.S. Shan, W. Ye, H. Li and X.Z. Li	2424
<b>Automatic Identification of Fundamental Frequency for Tied Arch Bridge Suspender Tension Monitoring</b> Y. Li, Y.Q. Xiang and B.C. Chen	2429
<b>Substructural Damage Identification of Stone Arch Bridge Based on Probabilistic Neural Network</b> F.Q. Guo and Z.W. Yu	2433
<b>Research on Alignment Error of Cable-Stayed Bridge Based on Stream of Variation</b> L. Shen and L.J. Liu	2439
<b>Based on ANSYS the Application of Virtual Crack Close Technique in the Calculation of Strain Energy Release Rate in Interface Crack</b> C. Cheng and S. Wan	2444
<b>Solar Radiation-Induced Temperature Variation of Concrete Bridge Piers</b> B. Chen, X.J. Li, H.M. Pan and J. Zheng	2451
<b>Spatial Analysis of Vehicle-Bridge Coupled Vibration Response between Curved Continuous Rigid-Frame Bridge and Motor Vehicle</b> Y. Shi, S.T. Fang, Q.Y. Tian and W. Chen	2456
<b>Influence of Side Stringer to Deck Deformation of Four-Lines High-Speed Railway Cable-Stayed Bridge with Double Cable Planes</b> J. Liang and M.X. Ye	2462
<b>Numerical Analysis of Control Indexes in Design of Low-Pylon Cable-Stayed Bridge</b> S.T. Dou, H.H. Chen, S.G. Cui and J.B. Zhu	2468
<b>Fracture Feature and Failure Cause Analysis of Cable Wire on Bridges</b> C.H. Deng	2472
<b>A Discussion on the Whole-Life Monitoring Mode of Large Bridge from Construction to Operation</b> J.T. Zhou, Y. Chen and S. Huang	2479
<b>Bridge Structural Safety Assessment Technology Based on Statistic Analysis</b> S.M. Liu, F.P. Liu and L. Liu	2486

<b>Translation-Torsion Coupling Analysis on Skew Bridge</b> M.Q. Lu, X.Z. Cao and S.Q. Guo	2492
<b>Dynamic Characteristic Analysis Considering of Pile-Soil-Superstructure Interaction Based on Long-Span Cable-Stayed Bridge</b> J. Cao	2497
<b>Situ Tests of Bearing Character on Large Diameter Deep Socketed Pile in Qingdao Gulf Bridge</b> C.L. He and C.Z. Gong	2501
<b>Vibration Analysis of a Beam with Multiple Cracks</b> C.L. Xiao and L.L. Xu	2505
<b>Research on Surface Cracks Identification of Continuous Steel Box Girder Bridge by Wavelet Analysis of the Strain Mode</b> D.Q. Guan, H.W. Ying and X.L. Zhong	2509
<b>Static and Dynamic Test Detection of Steel Tube Truss Arch Bridge</b> X.L. Li, Z.G. Sun and Y.F. Fan	2513
<b>Vertical Crack Moment Test Research on Prestressed Concrete Hollow Slab due to Repeated Load</b> W.X. Zhao, P. Lu, H.J. Wu and Z.X. Zhou	2521
<b>Simplified Analysis of Longitudinal Stiffened Plates in a Continuous Steel Box Girder Bridge</b> H. Zhang, Z.Y. Yuan, S.Z. Liu, Z.J. Yang and X.W. Shi	2526
<b>Calculation of Load Lateral Distribution for Hinged Slab Bridge with Different Stiffness between Outside Slabs and Inside Slabs</b> H.L. Zhou, X.D. Shen and T.Y. Zhang	2530
<b>Finite Element Stress Analysis on Crotch Joint of A-Type Super-High Pier</b> C.P. Tang, L.L. Zhang and X.L. Luo	2535
<b>Research on Design and Construction of Continuous Rigid Frame Bridge in Canyon Area</b> J.R. Peng, T.H. Jiang, Y. Peng and Q.P. Jin	2539
<b>Analysis of the Closure Method of Cantilever Construction PC Box-Girder Bridge with Corrugated Steel Webs under Asymmetric Constraint</b> Y.L. Wang, M.H. Li, S. Wan and J.D. Zhang	2543
<b>Study on the Influencing Factors of the Durability of Urban Reinforced Concrete Bridges in Hebei Province</b> Q.C. Bi, S.Q. Zhu and H.H. Cui	2549
<b>Field Test of a Multigirder Concrete Bridge of 25m Span</b> J.R. Yang, Z.X. Zheng, X.D. Yang and H.D. Bai	2553
<b>Simulation of Air Temperature in an Under-Bridge Storehouse</b> H. Xiao, Y. Ding and X.T. Wang	2557
<b>Test Study on the Influence of Periodical Temperature Stress on the Loss of Structural Prestress</b> X. Li, T.T. Cai and A.B. Gu	2561
<b>Research on Structure Design of Cable-Stayed Bridge</b> X. Li and T.T. Cai	2565

## **Chapter 10: Traffic Control and Information Technology**

<b>Study on Mathematical Model of Freight Transportation Logistic Control</b> L. Zuo	2573
<b>Modeling the Effects of Rainfall on Urban Freeway Free-Flow Speeds</b> L.J. Shi, Y. Cheng, D.X. Ou and X.H. Chen	2577
<b>Design Theory for Speed Control Based on Visual Rhythm for Long Stretches of Freeway</b> Z.P. Zhang, S.Y. Zhu, H. Wang and B. Liu	2586
<b>An Overview of the Usage of Adaptive Signal Control System in the United States of America</b> Y. Zhao and Z. Tian	2591
<b>Research on Multimodal Logistics Emergency Decision System Based on GIS</b> X.F. Fu, J. Zhang and P.H. Sun	2599

<b>Phasing Sequence and Signal Spacing Based Progression Bandwidth Optimization Technique</b>	
Y. Zhao and Z. Tian	2604
<b>Inventory-Transportation Integrated Optimization Problem in Many-to-One Distribution System</b>	
L.H. Liu, Y.M. Pei and J. Sun	2610
<b>Study on Vehicle Speed in Pore Water Pressure of Rigid Pavement Base Using Poro-Elasticity</b>	
H.B. Li and Y.P. Sheng	2615
<b>A Study on the Major Problems of Urban Traffic Impact Analysis</b>	
X.Q. Xiao	2619
<b>Study on Traffic Flow Parameters Model of Expressway Interchanges Opening Distance</b>	
W. Liu, X. Chen and A. Hu	2623
<b>Research on the Service Mode of Tele-Taxi</b>	
X.S. Yao, Y. Cui, J.H. Qu and C.X. Zhang	2629
<b>Location of Logistic Distribution Center Supported by ArcGIS</b>	
Y.Z. Yang	2633
<b>Weighted Network Model of Urban Traffic</b>	
J. Song, J.F. Wang, T.L. He and M.D. Deng	2637
<b>System Dynamics Based Research on Performance of Supply Chain</b>	
S.W. Ji, Q.X. Xie and Y.C. Fang	2643
<b>Study on Evaluation Index System of Traffic Simulation under the Concept of Low-Carbon</b>	
H. Zhao and J.H. Chen	2648
<b>Design of Intelligent Vehicle Security and Immobilization System</b>	
X.F. Huang, H.J. Zou, J.L. Ten and Y.L. Chen	2654
<b>Research on Construction of Mobile Payment System Based on the Phone Financial IC Card</b>	
W. Liu, J.L. Zhang and G.M. Yang	2658
<b>The Research on Electronic Commerce Logistics Integration Mode of the Automobile Manufacturing Enterprises</b>	
S.W. Ji, H.J. Ma and W.L. Wu	2664
<b>Research on the Combination Model of Short-Term Traffic Flow Forecasting</b>	
Y.L. Liu, W.S. Hu, S.L. Li and H.W. Li	2668
<b>Research and Design Embedded Security Computer Based on TMR for Train-Ground Communication System</b>	
X.Q. Zeng, J. Zhu, T.S. Xiong, T. Shen and L.X. Wei	2673
<b>Traffic Information Collection System for Congestion Identification and Relief</b>	
T. Jiang, J. An, H.Z. Zhang and Z.G. Qian	2680
<b>Research on Dynamic Traffic Flow Forecasting Based on Improved Particle Swarm Optimization Algorithm and Neural Network Theory</b>	
B. Qi, C.X. Ma and L. Sun	2686
<b>Mobile Information System for Sustainable Project Management</b>	
M.S. Fathi, N. Rawai and M. Abedi	2690
<b>Multi-Scenarios Vehicle Traces Modeling in Co-Simulation of Vehicular Ad-Hoc Networks</b>	
J.F. Wang, S. Nie, X.D. Yan and W. Xiang	2694
<b>Modified Monkey Algorithm and its Application to the Optimal Sensor Placement</b>	
T.H. Yi, X.D. Zhang and H.N. Li	2699
<b>The Quantitative Model of Curb Parking Impacts on Traffic Flow Delay</b>	
Y.L. Chang and S. Zhang	2703
<b>Signal Optimization Design of the Mid-Block Crosswalk</b>	
Y.L. Chang and F. Sun	2708
<b>Design and Simulation of Urban Road Intersection Signal Linear Control System</b>	
S.N. Sun, W. Xiao, X. Qiu, J.D. Chen and L.X. Ying	2713
<b>An Extended Car-Following Model in a Multi-Interaction Driving System</b>	
M.X. Tuo	2717
<b>Single-Line Traffic Lights Wireless Signal Control Device</b>	
S.B. Yu, Y.J. Hu, X.S. He, S.W. Yang and X.W. Chen	2721



<b>Safety Evaluation for Signalized Intersections Using GIS Techniques and Statistic Analysis</b> C.P. Zhang, X.D. Yan, M.W. An, B. Wang and H. Zhao	2725
<b>Design of Fast Performance Testing &amp; Analysis System of Road Traffic Markings</b> J. Ma and W.Y. Su	2731
<b>Random P-Set and System State Recognition</b> Z.L. Guo	2738
<b>Research of Signalized Intersection Delay Model by Using Optimization Method</b> Y.L. Chang and Y.Y. Zhou	2742
<b>The Design and Implement of the Video Monitoring System Based on WinCE</b> Y.H. Yu, Y.M. Li and Y. Deng	2747
<b>Hierarchical Regression Model for Analyzing Truck Freight Demand</b> H.L. Wang and Z.K. Shi	2752
<b>Prediction of Atmospheric Delay of Medium and Long Distance GPS Reference Station Network</b> Q.Y. Guo, J.W. Wang and B.M. Han	2757
<b>Design of Multimedia Assets Management System Based on RFID</b> M.H. Wang, Z. Zheng, J.H. Pan and J.F. Liu	2761
<b>Experimental Analysis of Quadrilateral Positioning Algorithm for Vehicular Ad Hoc Networks</b> J.F. Wang, X.D. Yan, S. Nie and X.M. Li	2765
<b>Visualization Method of Bucket Terminal Yard Working Data</b> H.J. Lu, H.Q. Zhen and D.F. Chang	2770
<b>The Improvement of Monocular Distance Measurement in Security Warning System</b> F.L. Wei	2775
<b>Requirements Analysis on the Highway Emergency Resource Based on Fuzzy Comprehensive Evaluation</b> T. Ge	2779
<b>Multiple Lattices Model of Traffic Flow with Relative Current</b> G.H. Peng	2784
<b>Study on Grades of Freeway Meteorological Disasters by Risk Matrix</b> H. Zhang	2788
<b>Inventory-Transportation Integrated Optimization Problem</b> Y.M. Pei, C.M. Ye and L.H. Liu	2793

## **Chapter 11: Carrier Operation Engineering**

<b>Fuzzy Sliding Mode Control for Attitude of Flapping Wing Micro Aerial Vehicle Based on Variable Rate Reaching Law</b> S.B. Hu, W.H. Lu, Z.Y. Chen, L. Lei and Y.X. Zhang	2801
<b>An Evaluation Method for the Estimated Travel Speed and Travel Time by Taxi Floating Car Data</b> H.W. Fu and L.C. Qu	2805
<b>Research and Development Status of Heat Pump System for Electric Vehicle</b> G.H. Zhou, Y.F. Li and Y. Liu	2811
<b>The Method of Establishing Model for Describing the Structural Constitutive Relationship of Desert Sand under Moving Vehicle</b> W.W. Lv, L. Gu and X.T. Huang	2815
<b>Application of Particle Damping in Vibration and Noise Isolation of Drum Brake</b> Z.W. Xia, J.W. Qin and H.R. Pan	2820
<b>Study on the Experiment of the Safety of C<sub>62BK</sub>-Wagon Loaded Running on Sharp Curves after Raising the Limited Height of Gravity Center</b> H. Liu, Z.Y. Liu and M.Q. Shen	2824
<b>Evaluation Method of Vehicle Sound Quality</b> Z.F. Tan and G.P. Tan	2829
<b>Application of Parametric Modeling in Optimization Design on Aluminum Alloy Wheels</b> D.L. Yi	2834
<b>Research on a New Type of Elevator Safety Catch</b> Z.Y. Zhang, M.M. Tan, H.Y. Tian and K.L. Duan	2837

<b>Research on Optimization Model of Taxi-Carpooling Expenses</b> F. He, X. Qiu, Q. Yang, J.D. Chen and H.Q. Yu	2841
<b>Roll Forging Technology and 3D Finite Element Simulation of Automobile Front Axle</b> R.X. Li and S.H. Jiao	2845
<b>Airside Pressure Drop Mechanism of Automobile Air-Conditioner Evaporator Plating with Hydrophilic Film</b> Q. Ouyang	2850
<b>A Heuristic Algorithm for Solving Crew Rostering Problem</b> M.Y. Zhao, Z.Y. Wang and Q. Liu	2854
<b>Effects of Eco-Driving on Driving Performance</b> X.Y. Yang, D. Li and P.J. Zheng	2859
<b>SWOT Analysis of Operation Strategies of the World's Top 20 Carriers</b> C.C. Chou, J.M. Yih, C.P. Wong, H.T. Chang, M.H. Chen, H.W. Chang, H.Y. Lai and C.Y. Lin	2863
<b>Research on the Influence of Natural Factors to Ro-Ro Passenger Ship in Weihai-Dalian Route and Countermeasures</b> A.X. Zhang and F.Z. Qi	2867
<b>The Application and Comparison of Two Different Optimization Algorithms in the Optimization Design of Hydrofoil</b> C. Wang, F. Feng, X. Chang, C.Y. Guo and Y.H. Liu	2871
<b>Computer Simulation of Hot Stamping Process of DP Steel Car Bumper Chain Based on Dynaform</b> H.W. Liu, Z.H. Liu, H.X. Li and S.B. Ping	2877
<b>Study on Wing Layout Design of Aircraft</b> X.J. Chen	2881
<b>Study on Detailed Mass Estimation of Aircraft</b> X.J. Chen	2885